HL

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/868,845	09/07/2001	Juergen Rolf Mueller	0179-0170P	6312

2292 7590 07/08/2003

BIRCH STEWART KOLASCH & BIRCH
PO BOX 747
FALLS CHURCH, VA 22040-0747

EXAMINER
STOCK JR, GORDON J

ART UNIT	PAPER NUMBER
2877	

DATE MAILED: 07/08/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/868,845	MUELLER, JUERGEN ROLF	
	Examiner	Art Unit	
	Gordon J Stock	2877	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 23-43 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 23-25,29,34 and 36-43 is/are rejected.

7)☒ Claim(s) 26, 27,28, 30-33, and 35 is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 7 .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Specification

1. The incorporation of essential material in the specification by reference to a foreign application or patent, or to a publication is improper (page 11, line 22 of applicant's disclosure with WO 95/35492). Applicant is required to amend the disclosure to include the material incorporated by reference. The amendment must be accompanied by an affidavit or declaration executed by the applicant, or a practitioner representing the applicant, stating that the amendatory material consists of the same material incorporated by reference in the referencing application. See *In re Hawkins*, 486 F.2d 569, 179 USPQ 157 (CCPA 1973); *In re Hawkins*, 486 F.2d 579, 179 USPQ 163 (CCPA 1973); and *In re Hawkins*, 486 F.2d 577, 179 USPQ 167 (CCPA 1973).

2. The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

(a) TITLE OF THE INVENTION.
(b) CROSS-REFERENCE TO RELATED APPLICATIONS.
(c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
(d) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC (See 37 CFR 1.52(e)(5) and MPEP 608.05. Computer program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)), and tables having more than 50 pages of text are permitted to be submitted on compact discs.) or

REFERENCE TO A "MICROFICHE APPENDIX" (See MPEP § 608.05(a). "Microfiche Appendices" were accepted by the Office until March 1, 2001.)

(e) BACKGROUND OF THE INVENTION.

(1) Field of the Invention.

(2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.

(f) BRIEF SUMMARY OF THE INVENTION.

(g) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).

(h) DETAILED DESCRIPTION OF THE INVENTION.

(i) CLAIM OR CLAIMS (commencing on a separate sheet).

(j) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).

(k) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

Drawings

3. The drawings are objected to because Figs. 1-7b are entitled: Figur 1 ... Figur 7b. Examiner suggests entitling them either Figure 1 ... Figure 7b or Fig. 1 ... Fig. 7b. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Objections

4. **Claim 23** is objected to because of the following informalities: on line 25, "a second opjective" should read –a second objective--. Appropriate correction is required.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. **Claims 23-25, 29, 34, 36 and 43** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

7. A broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by "such as" and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949). In the present instance, **claim 23** recites the broad recitation "arranged on and/or in a substrate," and the claim also recites "preferably being arranged on a support and having a refraction-index which is different from the one of an at least one component adjacent to the substrate" which is the narrower statement of the range/limitation; **claim 24** recites the broad recitation "arranged on and/or in a substrate," and the claim also recites "preferably being arranged on a support and having a refraction-index which is different from the one of an at least one component adjacent to the substrate" which is the narrower statement of the range/limitation; **claim 25** recites the broad recitation "extent of the confocal detected volume of the auxiliary focus," and the claim also recites "in particular in direction of the respective optical axes of the objectives is smaller than the extent of the measuring volume" which is the narrower statement of the range/limitation; **claim 29** recites the broad recitation "indirectly positioning the measuring volume the position of the auxiliary focus relative to the interface is moved" and the

claim also recites "preferably periodically substantially along the optical axis of the optic generating the auxiliary focus" which is the narrower statement of the range/limitation; claim 34 recites the broad recitation "mineral or organic substrates" and the claim also recites "in particular polymeric gels, polymeric particles built up from inorganic materials, vesicular structures, cells, bacteria, and virus" which is the narrower statement of the range/limitation.

Claims 34, 36, and 43 provide for the use of mineral or organic substrates (claim 34); the use of the method according to claim 23 (claim 36); the use of the apparatus according to claim 37, but, since the claims do not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

Claims 34, 36, and 43 are rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd.* v. *Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. **Claims 24, and 37-43** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Kelderman et al. (4,844,617)** in view of **Boettner et al. (5,880,465)**.

As for **claim 24**, Kelderman discloses the following in a confocal measuring microscope with automatic focusing: at least one entity, films, is arranged on a substrate, a wafer with patterns, on a support; the entity is scanned with a measuring volume using at least one apparatus being confocal with a first radiation source and at least one objective, thereby receiving measuring values, intensities, optical parameters which are processed by means of signal processing for characterization of the entity; the entity substantially maintains its position in respect to the substrate or support; auxiliary focus is generated by means of at least one second radiation source and an optic, said auxiliary focus is at least partly arranged on the interface between wafer and films; the radiation generated by the second radiation source is collimated by an optic and the radiation generated by the second radiation source is collimated by a second optic being different from first optic; a retroreflection from the auxiliary focus is detected by a zero order detector with a diaphragm; said retroreflection is used for measuring the position of the interface and thus for positioning the measuring volume; whereas, the position of the auxiliary focus relative to the measuring volume is adjusted (Fig. 9, cols. 7-10; col. 16, lines 45-67). As for collimating the first radiation source, Kelderman is silent. However, Boettner in a scanning confocal microscope teaches that confocal microscopes routinely have collimating lens for collimation of the radiation which further directs the radiation to the objective lens (col. 1, lines 14-20). Therefore, it would be obvious to one skilled in the art at the time the invention was made to have the apparatus comprise a collimating lens for the collimation of the first radiation source and to further direct the radiation to the objective for imaging.

As for **claims 37 and 40-43**, Kelderman discloses the following: at least one first radiation source as well as least one device being confocal comprising a first objective and at

least one detector for detecting measuring values from the measuring volume, at least a second radiation source and at least one second detector for detecting a retroreflection from an auxiliary focus, said second detector having a diaphragm; at least one device for positioning measuring volume and auxiliary focus relative to substrate (Fig. 9; 28 and 38); a device for variably positioning the auxiliary focus relative to the measuring volume, a stage, a second optic collimating the radiation generated by the second radiation sources; means for variation of the convergence of the beams that are focused by the respective objective for generation of auxiliary focus and the measuring volume by the movement of the stage in the z-direction; for use of examining a material, films on wafers (Fig. 9, cols. 7-10; col. 16, lines 45-67). As for collimating the first radiation source, Kelderman is silent. However, Boettner in a scanning confocal microscope teaches that confocal microscopes routinely have collimating lens for collimation of the radiation which further directs the radiation to the objective lens (col. 1, lines 14-20). Therefore, it would be obvious to one skilled in the art at the time the invention was made to have the apparatus comprise a collimating lens for the collimation of the first radiation source and to further direct the radiation to the objective for imaging.

As for a second objective, Kelderman is silent. It is well known in the art of microscopes to have the optical systems comprise multiple objective lenses in order to vary magnification. Therefore, it would be obvious to one skilled in the art at the time the invention was made to have the optical system comprise a plurality of objective lenses for it is well known in microscope systems to have a plurality of lenses to vary magnification. And therefore, if there a plurality of objective lenses for varying magnification. It would be obvious to one skilled in the

art at the time the invention was made to have means for adjusting the objective lens relative position to each other in order to vary magnification.

As for **claims 38 and 39**, Kelderman discloses the following: at least one radiation source as well as at least one confocal device and at least one detector for detecting measuring values from a measuring volume, at least one second radiation source as well as at least one further device comprising the same objective and a second detector for detecting a retroreflection from an auxiliary focus, the second detector having a diaphragm; at least one device for positioning the measuring volume and auxiliary focus relative to the substrate; a second optic different from the first optic collimating the radiation generated by the second radiation source; whereby the auxiliary focus is adjusted relative to the measuring volume in a defined manner (Fig. 9, cols. 7-10; col. 16, lines 45-67). As for collimating the first radiation source, Kelderman is silent. However, Boettner in a scanning confocal microscope teaches that confocal microscopes routinely have collimating lens for collimation of the radiation which further directs the radiation to the objective lens (col. 1, lines 14-20). Therefore, it would be obvious to one skilled in the art at the time the invention was made to have the apparatus comprise a collimating lens for the collimation of the first radiation source and to further direct the radiation to the objective for imaging.

Allowable Subject Matter

10. **Claim 23** would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action.

Claims 25 and 29 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Claims 26, 27, 28, 30-33, and 35 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

As to **claim 23**, the prior art of record, taken alone or in combination, fails to disclose or render obvious in a method for optically detecting at least one entity "before and/or during the scanning process an auxiliary focus is generated by means of at least one second radiation source and a second objective," in combination with the rest of the limitations of **claims 23, 25-33, and 35**.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

U.S. Patent 4,958,920 to Jorgens et al.

U.S. Patent 4,959,552 to Saffert et al.

U.S. Patent 5,932,872 to Price

U.S. Patent 6,124,967 to Toh

U.S. Patent 6,353,216 to Oren et al.

Fax/Telephone Numbers

If the applicant wishes to send a fax dealing with either a proposed amendment or a discussion with a phone interview, then the fax should:

1) Contain either a statement "DRAFT" or "PROPOSED AMENDMENT" on the fax cover sheet; and

2) Should be unsigned by the attorney or agent.

This will ensure that it will not be entered into the case and will be forwarded to the examiner as quickly as possible.

Papers related to the application may be submitted to Group 2800 by Fax transmission. Papers should be faxed to Group 2800 via the PTO Fax machine located in Crystal Plaza 4. The form of such papers must conform to the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The CP4 Fax Machine number is: **(703) 308-7722**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gordon J. Stock whose telephone number is (703) 305-4787. The examiner can normally be reached on Monday-Friday, 10:00 a.m. - 6:30 p.m.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

gs
June 30, 2003

Sandra V. Smith
Primary Examiner
Art Unit 2877